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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,628	09/22/2003	Mats A. Brenner	Honeywell No. H0004494	1190

128 7590 11/30/2005

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EXAMINER	
MULL, FRED H	

ART UNIT	PAPER NUMBER
3662	

DATE MAILED: 11/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/667,628	BRENNER, MATS A.	
	Examiner	Art Unit	
	Fred H. Mull	3662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 October 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8,10-18 and 20-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,10-18 and 20-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 November 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments on p. 8, with respect to various objection(s), have been fully considered and are persuasive. The objections have been withdrawn.

2. Applicant's arguments on p. 8, with respect to the rejection(s) of claim 1 over Legrand have been fully considered but they are not persuasive.

Applicant argues Legrand does not actually calculate a total error (item 4, line 5). However, Legrand provides the determination of the total error in equation 26 on p. 4. Applicant then states that Legrand minimizes the error, not reports the error level (item 4, line 7). However, claim 1 does not contain a limitation to reporting the error level. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

3. Applicant's arguments on p. 8, with respect to the rejection(s) of claims 20-21 over Parkinson have been fully considered but they are not persuasive.

Applicant argues Parkinson fails to teach calculating an error contribution attributable to a low-power condition from the signal-to-noise ratio (item 5, lines 1-3).

Parkinson teaches a signal-to-noise ratio module operative to calculate a signal-to-noise ratio from the estimated wide band power and the estimated narrow band power (p. 391, equation 106). Parkinson then teaches a signal-to-noise threshold (p. 392, line 15). Thus, when the power is low enough that it is below the threshold, the determined error is the error at a low power condition.

4. Applicant's arguments on p. 9, with respect to the rejection(s) of claim 11 over Legrand in view of either one or Loh and Braff have been fully considered but they are not persuasive.

Applicant argues that Legrand cannot be applied to claim 11 because Legrand does not disclose a navigation measurement (item 7). However, Legrand alone does not need to disclose this feature, the combination as a whole does. Legrand discloses minimizing error in code or carrier phase measurements (abstract, first sentence). It would have been obvious for one of ordinary skill in the art to apply methods of minimizing error in code or carrier phase measurements to GPS positioning methods such as those of Loh and Braff.

5. Claims 2-8, 10, 12-18, and 22 are not argued separately.

Claim Objections

6. Claim(s) 13 is/are objected to under 37 CFR 1.75. The claim(s) recites the limitation " the value" in lines 2 and 4. There is insufficient antecedent basis for this limitation in the claim. Correction is required.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claim 1 is rejected under 35 U.S.C. 102(a) as being anticipated by Legrand.

Legrand discloses:

receiving at least one global positioning satellite radio signal (p. 1, Introduction, 1st ¶);

determining a signal noise ratio of the satellite radio signal and calculating from the signal-to-noise ratio a low power error contribution (p. 2, Model of Digital Tracking Loops, 1st ¶; p. 4, Total Tracking Error, 1st ¶);

in calculating a total error based at least in part on the low power condition error contribution (p. 4, ¶ including equations 26 and 27).

8. Claims 20-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Parkinson.

In regard to claim 20, Parkinson discloses:

a wide band power estimator operative to measure an average wide band power (p. 390, last ¶; p. 391, equation 104);

a narrow band power estimator operative to measure an average narrow band power (p. 390, last ¶; p. 391, equation 105);

a signal-to-noise ratio module operative to calculate a signal-to-noise ratio from the estimated wide band power and the estimated narrow band power (p. 391, equation 106); and

a low-power error module operative to calculate, from the signal-to-noise ratio, an error contribution attributable to a low-power condition (p. 392, 1st ¶).

In regard to claim 21, Parkinson further discloses:

the signal-to-noise ratio module further comprises confidence limit logic operative to determine a lower confidence limit and wherein the signal-to-noise ratio calculated by the signal-to-noise ratio logic is the lower confidence limit (p. 392, sentence following equation 116).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 2-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Legrand, as applied to claim 1, in further view of Parkinson.

In regard to claim 2, Legrand discloses the use of GPS signal to noise ratio (p. 2, Model of Digital Tracking Loops, 1st ¶), but does not disclose the details of how it is calculated.

Parkinson discloses the details of measuring the GPS signal to noise ratio. Specifically, Parkinson discloses:

measuring a wide band power of the satellite radio signal over a first time period and a narrow band power of the satellite radio signal over a second time period (p. 390, last ¶);

calculating an estimated signal-to-noise ratio based on the narrow band power and the wide band power (p. 391, equation 106).

It would have been obvious to use the known method of calculation signal to noise ratio of Parkinson in order to calculate signal to noise ratio in Legrand.

In regard to claim 3, Parkinson further discloses a wide band power includes averaging the wide band power ever the first time period to obtain a value P_w and wherein measuring a narrow band power includes averaging the narrow band power over the second time period to obtain the a P_n (p. 391, equations 104 and 105).

In regard to claim 4, Parkinson further discloses the first time period has a length T, the second time period has a length that is M times as long as T, and the signal-to-noise ratio is calculated according to the given equation (p. 390, last ¶; p. 392, equation 117, where the T_{NP} term is equivalent to P_n/P_w, and thus the equation is equivalent to the given equation).

In regard to claims 5-8, Parkinson further discloses calculating a lower confidence limit (p. 392, sentence following equation 116).

10. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Legrand, as applied to claim 1, and in further view of either one of Loh and Braff.

Legrand discloses minimizing error in code or carrier phase measurements (abstract, first sentence), but fails to disclose issuing an alert if the total error exceeds an alert limit for a navigational measurement.

Loh (col. 8, lines 24-34) and Braff (Figs. 2 and 4) each disclose issuing an alert if the total error exceeds an alert limit for a navigational measurement.

It would have been obvious for one of ordinary skill in the art to apply methods of minimizing error in code or carrier phase measurements to GPS positioning methods such as those of Loh and Braff. It would have further been obvious to include an alert for the situations where the error minimizing procedure of Legrand fails to minimize the error enough for the resulting measurement to be accurate enough for a user to have confidence in it, particularly when it will be used for landing systems, where human safety is involved.

11. Claims 12-18 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Legrand and Parkinson, as applied to claims 2-8, and in further view of either one of Loh and Braff.

Legrand discloses minimizing total error, but fails to disclose issuing an alert if the total error exceeds an alert limit.

Loh (col. 8, lines 24-34) and Braff (Figs. 2 and 4) each disclose issuing an alert if the total error exceeds an alert limit.

It would have been obvious to include an alert for the situations where the error minimizing procedure of Legrand fails to minimize the error enough for the resulting measurement to be accurate enough for a user to have confidence in it, particularly when it will be used for landing systems, where human safety is involved.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred H. Mull whose telephone number is 571-272-6975. The examiner can normally be reached on M-F 9:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas H. Tarcza can be reached on 571-272-6979. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Fred H. Mull
Examiner
Art Unit 3662

fhm

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